REMARKS

In the Office Action dated January 25, 2008, claims 1-19 were rejected under 35 U.S.C. §102(e) as being anticipated by Niederdrank.

Applicants note with appreciation the telephone interview courteously afforded the undersigned representative of the Applicants, at which the above rejection was discussed. In the telephone interview, it was proposed to amend independent claims 1 and 9 by bringing the subject matter of claims 17 and 19, respectively, into those independent claims.

Both of previous claims 17 and 19 stated that the analysis of the output signal results in a transfer function being obtained for the first hearing device, and the setting parameters for the second hearing aid device are then determined based on the transfer function of the first hearing device.

In the Final Rejection dated January 25, 2008, the Examiner, in paragraph 2 at page 2, stated "Transfer functions are the signal characteristics such as signal level, frequency spectra, etc." Applicants respectfully submit this is not a technically correct statement. Applicants acknowledge that the Niederdrank reference discloses analyzing acoustic characteristics of the type noted by the Examiner, but those characteristics are *not* transfer functions. The items that are analyzed in the Niederdrank reference are, by contrast, acoustic field characteristics, and are thus characteristics of the input signal itself that is incoming to the Niederdrank device.

The term "transfer function" is a well-known and well-understood term in the field of electrical and systems engineering in general. The term "transfer function" means a mathematical function that represents the ratio of the output (the numerator) to the input (the denominator) of a particular circuit or device. The

purpose of a transfer function, as is well-known to those of ordinary skill in the present technology, is to allow the output of any particular circuit or device to be easily determined by multiplying the input by the transfer function.

Evidentiary support for this standard and well-known and well-understood meaning of the term "transfer function" is provided herewith in Exhibit "A" and Exhibit "B". Exhibit "A" is an excerpt from the IEEE Standard Dictionary of Electrical and Electronic Terms, with "function, transfer" being defined at page 380 and "transfer function" being defined at page 957. Exhibit "B" is page 537 of the McGraw-Hill Dictionary of Electronics and Computer Technology, wherein "transfer function" is defined. All of these definitions are consistent with the definition described above, and the term "transfer function" is being used in the claims of the present application consistent with its ordinary and well-understood meaning to those of ordinary skill in the relevant technology.

Since the Niederdrank reference does not disclose analyzing any device or circuit for the purpose of ascertaining the transfer function thereof, it does not disclose making use of such a transfer function for setting the parameters of another device.

The Niederdrank reference therefore does not disclose or suggest the subject matter of previous claims 17 and 19, and therefore independent claims 1 and 9 have been amended to bring the subject matter thereof respectively into those independent claims. Applicants therefore submit all claims of the application are in condition for allowance. Certain of the dependent claims have been cancelled as either being redundant in view of the amendments to the independent claims, or as being inconsistent with the amendments made to the independent claims.

In the telephone interview, the Examiner did not make a commitment to allowance of independent claims 1 and 9 with the above amendments, but the Examiner stated in the telephone interview that the Examiner would thoroughly consider such an amendment when presented in a written response. Since the present Amendment does no more than bring the subject matter of dependent claims, which have already been examined and already been considered, into the respective independent claims, the present response does not raise any new issues requiring further searching or consideration. The present Amendment is therefore properly enterable under the provisions of 37 C.F.R. §1.116.

The Commissioner is hereby authorized to charge any additional fees which may be required, or to credit any overpayment to account No. 501519.

Submitted by,

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CH1\ 5699915.1

ANSI/IEEE Std 100-1984
Third Edition

IEEE Standard Dictionary of Electrical and Electronics Terms

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Published by
The Institute of Electrical and Electronics Engineers, Inc.
New York, NY

Distributed in cooperation with
Wiley-Interscience, a division of John Wiley & Sons, Inc.

derivative exists. *Note:* The mathematical expression for this function is

$$g(X) = \frac{d}{dX}[f(X)] = \frac{d}{dX}[P\ (x \leqslant X)]$$

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function, probability distribution (control systems). Pertaining to a real random variable x, the function of an arbitrary value X- X of this variable, whose value is the probability, P, that the random variable is less than or equal to X. *Note:* The mathematical expression for this function is

$$f(X) = P(x \leqslant X)$$

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function relay (analog computers). In an analog computer, a relay used as a computing element, generally driven by a comparator. 9

function, return-transfer (closed loop) (control system, feedback). The transfer function obtained by taking the ratio of the Laplace transform of the return signal to the Laplace transform of its corresponding input signal. *See:* **control system, feedback.** 56

function switch (analog computers). In an analog computer, a manually operated switch used as a computing element; for example, to modify a circuit, to add or delete an input function or constant, etcetera. 9

function, system-transfer (automatic control). The transfer function obtained by taking the ratio of the Laplace transform of the signal corresponding to the ultimately controlled variable to the Laplace transform of the signal corresponding to the command. *See:* **control system, feedback.** 56, 329

function, transfer (1) (control system, feedback). A mathematical, graphic, or tabular statement of the influence that a system or element has on a signal or action compared at input and at output terminals. *Note:* For a linear system, general usage limits the transfer function to mean the ratio of the Laplace transform of the output to the Laplace transform of the input in the absence of all other signals, and with all initial conditions zero. *See:* **control system, feedback; transfer function.** 56, 329

(2) (antenna). The complex ratio of the output of the device to its input. It is also the combined phase and frequency responses. 151

function, weighting (control system, feedback). A function representing the time response of a linear system, or element to a unit-impulse forcing function: the derivative of the time response to a unit-step forcing function. *Notes:* (1) The Laplace transform of the weighting function is the transfer function of the system or element. (2) The time response of a linear system or element to an arbitrary input is described in terms of the weighting function by means of the convolution integral. *See:* **control system, feedback.** 56, 329

function, work. *See:* **work function.**

fundamental component. The fundamental frequency component in the harmonic analysis of a wave. *See:* **signal wave.** 349

fundamental efficiency (thyristor). The ratio of the fundamental load power to the fundamental line power. 445

fundamental frequency (data transmission). (1) (Signal-transmission system). The reciprocal of the period of a wave. (2) (Mathematically). The lowest frequency component in the Fourier representation of a periodic quantity. (3) (Data transmission) (periodic quantity). The frequency of a sinusoidal quantity having the same period as the periodic quantity. 59

fundamental mode (fiber optics). The lowest order mode of a waveguide. In fibers, the mode designated LP_{01} or HE_{11}. *See:* **mode.** 433

fundamental mode of propagation (laser-maser). The mode in a **beamguide** or **beam resonator** which has a single maximum for the transverse field intensity over the cross-section of the beam. 363

fundamental power (thyristor). The product of the root-mean-square (rms) value of the fundamental current and the rms value of the fundamental voltage multiplied by the cosine of the phase angle by which the fundamental current lags the fundamental voltage. 445

fundamental-type piezoelectric crystal unit. A unit designed to utilize the lowest frequency of resonance for a particular mode of vibration. *See:* **crystal.** 328

furnace transformer (power and distribution transformer). A transformer that is designed to be connected to an electric arc furnace. 53

fuse (1) (National Electrical Code) (installations and equipment operating at over 600 volts, nominal). An overcurrent protective device with a circuit opening fusible part that is heated and severed by the passage of overcurrent through it. A fuse comprises all the parts that form a unit capable of performing the prescribed functions. It may or may not be the complete device necessary to connect it into an electrical circuit. 256

(2) (power switchgear). An overcurrent protective device with a circuit-opening fusible part that is heated and severed by the passage of the overcurrent through it. *Note:* A fuse comprises all the parts that form a unit capable of performing the prescribed functions. It may or may not be the complete device necessary to connect it into an electric circuit. 103, 443

fuse arcing time. *See:* **arcing time (of a fuse).** 103

fuse blade (of a cartridge fuse) (power switchgear). A cartridge-fuse terminal having a substantially rectangular cross-section. 103

fuse carrier (of an oil cutout) (power switchgear). An assembly of a cap which closes the top opening of an oil-cutout housing, an insulating member, and fuse contacts with means for making contact with the conducting element and for insertion into the fixed contacts of the fuse support. *Note:* The fuse carrier does not include the conducting element (fuse link). 103, 443

current, under specified conditions of illumination. *Note:* The relation is usually shown by a graph of the logarithm of the signal output current as a function of the logarithm of the illumination. *See:* **illumination; sensitivity; television.** 178, 190, 125

transfer check (electronic computation). A check (usually an automatic check) on the accuracy of a data transfer. *Note:* In particular, a check on the accuracy of the transfer of a word. 235, 210, 255, 77

transfer constant (electric transducer). *See:* **image transfer constant.**

transfer control (electronic computation). *See:* **jump.**

transfer current (1) (glow-discharge cold-cathode tube). The starter-gap current required to cause conduction across the main gap. *Note:* The transfer current is a function of the anode voltage. *See:* **gas tubes.** 190

(2) (gas tubes). The current to one electrode required to initiate breakdown to another electrode. *Note:* The transfer current is a function of the voltage of the second electrode. 125

transfer-current ratio (linear passive network). A transmittance for which the variables are currents. *Note:* The word **transfer** is frequently dropped in present usage. *See:* **linear passive networks.** 238

transfer function (1) (high-power wide-band transformers). The complex ratio of the output of the device to its input. It is also the combined phase and frequency responses. 321

(2) (circuits and systems). A response function for which the variables are measured at different ports (terminal pairs). The variables are usually considered to represent an input signal and a response to that excitation. *See:* **function, transfer.** 67

(3) (low-power wide-band transformers). The complex ratio of the output of the device to its input. It is also the combined phase and frequency responses. 151

(4) (nuclear power generating station). A mathematical, graphical, or tabular statement of the influence which a module has on a signal or action compared at input and at output terminals. This should be specified as to whether it is transient or steady state. 355

(5) (excitation control systems). A mathematical, graphical, or tabular statement of the influence which a system or element has on a signal or action compared at input and output terminals. *Note:* For a linear system, general usage limits the transfer function to mean the ratio of the Laplace transform of the output to the Laplace transform of the input in the absence of all other signals, and with all initial conditions zero. 353

transfer function of a device (fiber optics). The complex function, H(f), equal to the ratio of the output to input of the device as a function of frequency. The amplitude and phase responses are, respectively, the magnitude of H(f) and the phase of H(f). *Notes:* (1) For an optical fiber, H(f) is taken to be the ratio of output optical power to input optical power as a function of modulation frequency. (2) For a linear system, the transfer function and the impulse response h(t) are related through the Fourier transform pair, a common form of which is given by

$$H(f)=\int_{-\infty}^{\infty} h(t)\ \exp\ (i2\pi ft)dt$$
$$h(t)=\int_{-\infty}^{\infty} H(f)\ \exp\ (-2\pi ft)\mathrm{df}$$

where f is frequency. Often $H(f)$ is normalized to $H(0)$and $h(t)$to$\int_{-\infty}^{\infty} h(t)dt$, which by definition is $H(0)$.

Syn: **baseband response function; frequency response.** *See:* **impulse response.** 433

transfer immittance. *See:* **transmittance.**

transfer impedance (1) (linear passive networks). A transmittance for which the excitation is a current and the response is a voltage. *Note:* It is therefore the impedance obtained when the response is determined at a point other than that at which the driving force is applied, all terminals being terminated in any specified manner. In the case of an electric circuit, the response would be determined in any branch except that in which the driving force is. *See:* **self-impedance; linear passive networks; network analysis.** 238, 210

(2) (circuits and systems). (A) (linear passive networks) (general). A transmittance for which the excitation is a current and the response is a voltage. *See:* **linear passive networks.** (B) (from the ith terminal to the jth terminal of an n-terminal network). The (complex) voltage measured between the ith terminal and the reference point divided by the (complex) current applied to the jth terminal when all other terminals have arbitrary terminations. For example, for a 3-terminal network terminated in open circuits

$$Z_{12} = \left.\frac{V_1}{I_2}\right|_{I_1} = 0$$

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transfer instruction. *See:* **branch instruction.**

transfer instrument (radiation protection). Instrument or dosimeter exhibiting high precision which has been standardized against a national or derived standardized source. 399

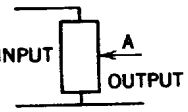
transfer locus (linear system or element). A plot of the transfer function as a function of frequency in any convenient coordinate system. *Note:* A plot of the reciprocal of the transfer function is called the inverse transfer locus. *See:* **amplitude frequency locus; phase locus. *See:* control system, feedback.** 329

transfer of control. Same as jump.

transfer ratio. A dimensionless transfer function. 210

transfer ratio correction (correction to setting). The deviation of the output phasor from nominal, in proportional parts of the input phasor.

$$\frac{\text{Output}}{\text{Input}} = A + \alpha + j\beta$$



A = setting
α = in-phase transfer ratio correction
β = quadrature transfer ratio correction. 1

McGraw-Hill Dictionary of ELECTRONICS AND COMPUTER TECHNOLOGY

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Editor in Chief

McGraw-Hill Book Company

New York St. Louis San Francisco

Auckland Bogotá Guatemala Hamburg
Johannesburg Lisbon London Madrid Mexico
Montreal New Delhi Panama Paris San Juan
São Paulo Singapore Sydney Tokyo Toronto

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1 2 3 4 5 6 7 8 9 0 DODO 8 9 1 0 9 8 7 6 5 4

ISBN 0-07-045416-7

Library of Congress Cataloging in Publication Data

McGraw-Hill dictionary of electronics and computer technology.

1. Electronics—Dictionaries. 2. Computers—Dictionaries. 3. Electronic data processing—Dictionaries. I. Parker, Sybil P. II. McGraw-Hill Book Company. III. Title: Electronics and computer technology.
TK7804.M4 1984 621.381'03'21 84-12211
ISBN 0-07-045416-7

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transfer *See* jump.

transfer admittance An admittance rating for electron tubes and other transducers or networks; it is equal to the complex alternating component of current flowing to one terminal from its external termination, divided by the complex alternating component of the voltage applied to the adjacent terminal on the cathode or reference side; all other terminals have arbitrary external terminations.

transfer characteristic 1. Relation, usually shown by a graph, between the voltage of one electrode and the current to another electrode, with all other electrode voltages being maintained constant. 2. Function which, multiplied by an input magnitude, will give a resulting output magnitude. 3. Relation between the illumination on a camera tube and the corresponding output-signal current, under specified conditions of illumination.

transfer check Check (usually automatic) on the accuracy of the transfer of a word in a computer operation.

transfer conditionally To copy, exchange, read, record, store, transmit, or write data or to change control or jump to another location according to a certain specified rule or in accordance with a certain criterion.

transfer function The mathematical relationship between the output of a control system and its input: for a linear system, it is the Laplace transform of the output divided by the Laplace transform of the input under conditions of zero initial-energy storage.

transfer impedance The ratio of the voltage applied at one pair of terminals of a network to the resultant current at another pair of terminals, all terminals being terminated in a specified manner.

transfer-in-channel command A command used to direct channel control to a specified location in main storage when the next channel command word is not stored in the next location in sequence.

transfer instruction Step in computer operation specifying the next operation to be performed, which is not necessarily the next instruction in sequence.

transfer interpreter A variation of a punched-card interpreter that senses a punched card and prints the punched information on the following card. Also known as posting interpreter.

transfer matrix The generalization of the concept of a transfer function to a multivariable system; it is the matrix whose product with the vector representing the input variables yields the vector representing the output variables.

transfer operation An operation which moves information from one storage location or one storage medium to another (for example, read, record, copy, transmit, exchange).

transfer rate The speed at which data are moved from a direct-access device to a central processing unit.

transferred-electron amplifier A diode amplifier, which generally uses a transferred-electron diode made from doped *n*-type gallium arsenide, that provides amplification in the gigahertz range to well over 50 gigahertz at power outputs typically below 1 watt continuous-wave. Abbreviated TEA.

transferred-electron device A semiconductor device, usually a diode, that depends on internal negative resistance caused by transferred electrons in gallium arsenide